WHAT IS CLAIMED IS:

1. A process for the oxidation of methanol, ethanol, or mixtures thereof comprising contacting the methanol and/or ethanol with an oxygen-containing gas and a supported catalyst comprising one or more platinum group metal oxides.

2. A process according to claim 1 comprising oxidation of methanol.

3. A process according to claim 2 in which the product of the process comprises primarily methyl formate.

4. A process according to claim 2 in which the product of the process comprises dimethoxymethane and/or formaldehyde.

5. A process according to claim 3 in which the product further comprises dimethoxymethane and/or formaldehyde.

6. A process according to claim 1 comprising oxidation of ethanol.

7. A process according to claim 6 in which the product of the process comprises primarily diethoxyethane.

8. A process according to claim 1 comprising oxidation of a mixture of methanol and ethanol.

9. A process according to claim 1 in which the surface density of the platinum group metal oxide or oxides on the support is from about 20 % to about 300% of the surface density of a monolayer of said oxide or oxides.

10 A process according to claim 1 in which the surface density of the .platinum group metal oxide or oxides is approximately that of a monolayer of oxide or oxides.

11. A process according to claim 1 in which the support comprises a material selected from alumina, silica, zirconia, titania, and mixtures thereof.

12. A process according to claim 11 in which the support comprises alumina.

13. A process according to claim 11 in which the support comprises silica.

14. A process according to claim 11 in which the support comprises zirconia.

15. A process according to claim 11 in which the support comprises titania.

16. A process according to claim 11 in which the support comprises stannic oxide.

17. A process according to claim 1 in which the support comprises one or more reducible metal oxides.

18. A process according to claim 17 in which the one or more reducible metal oxides are selected from reducible oxides of tin, iron, cerium, manganese, cobalt, nickel, chromium, zirconium, rhenium, titanium, silver and copper, and mixtures thereof.

19. A process according to claim 17 in which the one or more reducible metal oxides are selected from reducible oxides of tin, iron, cerium, zirconium, and mixtures thereof.

20. A process according to claim 17 in which the one or more reducible metal oxides comprises stannic oxide.

21. A process according to claim 17 in which the support comprises one or more layers of a reducible metal oxide or a mixture of such oxides disposed on a particulate alumina, silica, zirconia, or titania.

22. A process according to claim 21 in which the support comprises a layer of stannic oxide disposed on a particulate alumina, silica, titania, or zirconia.

23. A process according to claim 1 in which the catalyst comprises one or more ruthenium oxides.

24. A process according to claim 1 in which the catalyst comprises one or more rhodium oxides.

25. A process according to claim 1 in which the catalyst comprises one or more palladium oxides.

26. A process according to claim 1 in which the temperature is from about 30 to about 300°C.

27. A process according to claim 1 in which the temperature is from about 50 to about 180°C.

28. A process according to claim 1 in which the temperature is from about 80 to about 180°C.

29. A process for the production of a product comprising methyl formate comprising contacting a material comprising methanol with an oxygen-containing gas and a supported catalyst comprising one or more platinum group metal oxides.

30. A process according to claim 29 in which the product of the process further comprises dimethoxymethane and/or formaldehyde.

31. A process according to claim 29 in which the surface density of the platinum group metal oxide or oxides on the support is from about 20 % to about 300% of the surface density of a monolayer of said platinum group metal oxide or oxides.

32 A process according to claim 27 in which the surface density of the .platinum group metal oxide or oxides is approximately that of a monolayer of said oxide or oxides.

33. A process according to claim 29 in which the support comprises a material selected from alumina, silica, zirconia, titania, and mixtures thereof.

34. A process according to claim 33 in which the support comprises alumina.

35. A process according to claim 33 in which the support comprises silica.

36. A process according to claim 33 in which the support comprises zirconia.

37. A process according to claim 33 in which the support comprises titania.

38. A process according to claim 33 in which the support comprises stannic oxide.

39. A process according to claim 29 in which the support comprises one or more reducible metal oxides.

40. A process according to claim 39 in which the one or more reducible metal oxides are selected from reducible oxides of tin, iron, cerium, manganese, cobalt, nickel, chromium, zirconium, rhenium, titanium, silver and copper, and mixtures thereof.

41. A process according to claim 39 in which the one or more reducible metal oxides are selected from reducible oxides of tin, iron, cerium, zirconium, and mixtures thereof.

42. A process according to claim 39 in which the one or more reducible metal oxides comprise stannic oxide.

43. A process according to claim 39 in which the support comprises one or more layers of a reducible metal oxide or a mixture of such oxides disposed on a particulate alumina, silica, zirconia, or titania.

44. A process according to claim 43 in which the support comprises a layer of stannic oxide disposed on a particulate alumina, silica, titania, or zirconia.

45. A process according to claim 29 in which the catalyst comprises one or more ruthenium oxides.

46. A process according to claim 29 in which the catalyst comprises one or more rhodium oxides.

47. A process according to claim 29 in which the catalyst comprises one or more palladium oxides.

48. A process according to claim 29 in which the temperature is from about 30 to about 300°C.

49. A process according to claim 29 in which the temperature is from about 50 to about 180°C.

50. A process according to claim 29 in which the temperature is from about 80 to about 180°C.

51. A process for the production of a product comprising diethoxyethane comprising contacting a material comprising ethanol with an oxygen-containing gas and a supported catalyst comprising one or more platinum group metal oxides.

52. A catalyst comprising one or more platinum group metal oxides supported on a support comprising one or more layers comprised of a reducible metal oxide or a mixture of reducible metal oxides, the reducible oxide layer or layers being disposed on a particulate support comprising alumina, zirconia, silica, titania, zirconia, stannic oxide, or a mixture of two or more thereof.

53. A catalyst according to claim 52 in which the surface density of the ruthenium oxide on the support is greater than that for the monomeric isolated platinum group metal oxide or oxides.

54 . A catalyst according to claim 52 in which the reducible metal oxide is selected from reducible oxides of tin, iron, cerium, manganese, cobalt, nickel, chromium, zirconium, rhenium, titanium, silver and copper, and mixtures thereof.

55. A catalyst according to claim 52 in which the reducible metal oxide is selected from reducible oxides of tin, iron, cerium, zirconium, and mixtures thereof.

56. A catalyst according to claim 52 in which the reducible metal oxide comprises stannic oxide.

57. A catalyst according to claim 52 comprising one or more ruthenium oxides.

58. A catalyst according to claim 52 comprising one or more rhodium oxides.

59. A catalyst according to claim 52 comprising one or more palladium oxides.

60. A catalyst according to claim 52 in which the surface density of the platinum group metal oxide or oxides on the support is from about 20 % to about 300 % of the surface density of a monolayer of said platinum group metal oxide or oxides.

61. A catalyst according to claim 60 comprising one or more ruthenium oxides.

62. A catalyst according to claim 60 comprising one or more rhodium oxides.

63. A catalyst according to claim 60 comprising one or more palladium oxides.

64. A catalyst according to claim 52 in which the surface density of the platinum group metal oxide or oxides on the support is approximately that of a monolayer of said oxide or oxides at the surface of the support.

65. A catalyst according to claim 64 comprising one or more ruthenium oxides.

66. A catalyst according to claim 64 comprising one or more rhodium oxides.

67 A catalyst according to claim 64 comprising one or more palladium oxides.